US-PAT-NO: 6711154

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TITLE: Apparatus and method for device independent messaging **notification**

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Abstract Text - ABTX (1):
An apparatus and method for alerting a user upon receipt of selected messages, independent of the type of device generating the message is provided. Message generating devices include telephony devices (telephone, fax machine, etc.), or data devices such as a computer or PDA. All messages are converted into a format compatible with a data network for delivery to a web server. The web server includes a message **notification** system with message alert type selection and incoming message filtering. A user designates, either from a computer, or from a telephone, the types of messages for which s/he wishes to be alerted, and designates one or more device types (email address, fax machine, pager number, or telephone number) to receive the alert. When messages are received by the web server, they are distinguished by message type, and filtered according to the user defined criteria. Selected messages cause a message alert to be generated to the user configured devices.

Application Filing Date - AD (1):
19990129

TITLE - TI (1):
Apparatus and method for device independent messaging **notification**

Parent Case Text - PCTX (2):
This application is related to the following U.S. Patents and co-pending U.S. Patent Applications which are hereby incorporated by reference: application Ser. No. 09/239,560, filed Jan. 29, 1999, entitled "INTEGRATED MESSAGE STORAGE AND RETRIEVAL SYSTEM DISTRIBUTED OVER A LARGE GEOGRAPHICAL AREA"; application Ser. No. 09/240,367, filed Jan. 29, 1999 now U.S. Pat. No. 6,411,685, entitled "A SYSTEM AND METHOD FOR PROVIDING UNIFIED MESSAGING TO A USER WITH A THIN WEB BROWSER"; U.S. Pat. No. 6,263,064, issued Jul. 17, 2001, entitled "CENTRALIZED COMMUNICATION CONTROL CENTER FOR VISUALLY AND AUDIBLY UPDATING COMMUNICATION OPTIONS ASSOCIATED WITH COMMUNICATION SERVICES OF A UNIFIED MESSAGING SYSTEM AND METHODS THEREFOR"; application Ser. No. 09/239,584, filed Jan. 29, 1999, entitled "COMPUTER-IMPLEMENTED CALL-**FORWARDING** OPTIONS AND METHODS THEREFOR IN A UNIFIED MESSAGING SYSTEM";

application Ser. No. 09/240,893, filed Jan. 29, 1999, entitled "INTERACTIVE BILLING SYSTEM UTILIZING A THIN WEB CLIENT INTERFACE"; application Ser. No. 09/240,368, filed Jan. 29, 1999, entitled "A SYSTEM AND METHOD TO MANAGE PHONE SOURCED MESSAGES"; application Ser. No. 09/240,434, filed Jan. 29, 1999, entitled "METHOD AND APPARATUS FOR NETWORK INDEPENDENT INITIATION OF TELEPHONY"; application Ser. No. 09/240,435, filed Jan. 29, 1999, entitled "APPARATUS AND METHOD FOR DEVICE INDEPENDENT MESSAGING **NOTIFICATION**"; application Ser. No. 09/240,436, filed Jan. 29, 1999, entitled "APPARATUS AND METHOD FOR CHANNEL-TRANSPARENT MULTIMEDIA BROADCAST MESSAGING"; and application
Ser. No. 09/239,589, filed Jan. 29, 1999, entitled "VOICE ACCESS THROUGH A DATA-CENTRIC NETWORK TO AN INTEGRATED MESSAGE STORAGE AND RETRIEVAL SYSTEM".

Brief Summary Text - BSTX (4):

This invention relates in general to the fields of telephonic and data communication, and more specifically to a **notification** system for alerting a user of received messages, regardless of what type of device generated the message.

Brief Summary Text - BSTX (7):

In 1876, Alexander Graham Bell successfully transmitted words using a variable resistance transmitter. In the 19.sup.th century, a very short time after the introduction of Bell's device, telephony provided connections to a relatively large number of users over relatively short distances. Today, telecommunications networks encompass a number of differing technologies just to establish a voice connection from point A to point B. For example, an end user is usually connected by way of a loop (twisted pair) to a local telephone exchange. The local exchange is then connected via a hierarchy of switching centers. The connection between the centers is called a trunk, which consists physically of cable, coax, fiber optic or microwave **radio** links. To connect from an end point in one city to an end point in another city the order of connection is as follows. The first end point connects with a local toll center, which in turn connects to a primary center. If the receiving end point is managed by this primary center, the call is directed to a local toll center for the recipient, and ultimately to the receiving end point. If the primary center does not manage the receiving end point, the call is passed to a sectional center. The sectional center then passes the call to a regional center to be passed back down to another sectional center, then to a primary center, and eventually to the local center responsible for the recipient end point.

Brief Summary Text - BSTX (13):

To address the above-detailed deficiencies, the present invention provides a web based message alert system that includes a local point of presence (POP) server coupled to a plurality of message sending devices, and a device independent message **notification** system coupled to the POP server. The message **notification** system includes message alert type selection, and incoming message filtering, configurable by a user. The system also includes a plurality of receiving devices, coupled to the message **notification** system, for receiving a

message alert according to the message alert type selection.

Brief Summary Text - BSTX (14):

In another aspect, the present invention provides a message **notification** system, coupled to a data network, for receiving a plurality of messages originating from a plurality of different message sending devices, and for notifying a plurality of receiving devices upon receipt of selected ones of the plurality of received messages. The system includes a web server and message **notification**. The web server is coupled to the different message sending devices, to receive the messages. The message **notification** is coupled to the web server to obtain the selected ones of the received messages using user definable criteria, and for generating a message alert. The web server receives the message alert, and provides the message alert to the receiving devices utilizing the data network.

Detailed Description Text - DETX (16):

The NOC 420 contains a web server 422, a streaming audio converter 424, a text/speech converter 426, a mail server 428, a customer database 430, and message **notification** 432. Each of these will be discussed in greater detail below.

Detailed Description Text - DETX (22):

The message **notification** 432 provides for storage, retrieval, message filtering, and alert **notification** of received messages, according to user defined criteria. Specifics of the message **notification** 432 will be provided below with reference to FIGS. 7-12.

Detailed Description Text - DETX (25):

The NOC 510 contains a web server 512, message **notification** 514, and a customer database 516. Other elements of the NOC 510 have been left out of FIG. 5 for ease of discussion. Operationally, if a user at a computer 504 in New York wished to establish voice to voice communication between his/her telephone 502, and a telephone 522 in Paris, the following sequence would occur. The user would select the two telephone numbers to be dialed, one associated with the telephone 502, the other associated with the telephone 522. The user selects these numbers from a customer database 516 via connection to the NOC 510 from his/her computer 504, or enters the numbers directly. Once the numbers are selected or input, the user initiates the call. The NOC 510 establishes a data connection with the local server 520 in Paris and the local server 506 in New York in one of two ways. First, the NOC 510 may instruct the New York POP 506 to dial the local New York number. Once the local connection is established, the New York POP 506 directly dials the Paris number. Or second, the NOC 510 may instruct the New York POP 506 to dial the local New York number. Once the local connection is established, the New York POP 506 sends a request to the Paris POP 520 to dial the local Paris number. Once both local connections are established, the New York and Paris POP's 506, 520 communicate the voice data between each other using standard voice over Internet Protocols (e.g., H.323). More specifically, the voice information provided by each telephone 522 is converted into digital audio, transmitted

over the data network to the other data server, converted back to voice format, and provided to the end device. In this scenario, the telephone conversation was initiated by the computer 504, over a data network.

Detailed Description Text - DETX (28):
In both of these examples, it is possible that either of the end devices called by the NOC 510 do not answer. When this occurs, the message **notification** 514 allows a caller (whether the call is a telephone, or fax device, for example) to leave a message. The message is stored within the message **notification** 514 for later retrieval by a user.

Detailed Description Text - DETX (33):
In addition, a communications dashboard 608 is provided. The communications dashboard 608 allows a user to configure how the telephony server is to act when receiving messages. For example, if a user receives a telephone call to his/her ThinkLink number, he can have it automatically **forwarded** to a different telephone. If the user is traveling, for example, upon arrival at each destination, the user could access his configuration, via a computer or a telephone, and could change his configuration to **forward** all calls to his new destination.

Detailed Description Text - DETX (35):
Referring now to FIG. 7, a screen shot 700 is shown of communication settings accessed via the options link 606 on the screen 600. The screen 700 includes communication settings 702, message alert selection boxes 704, 706 and 708, and message filters 710. The communication settings 702 allow a user to selectively configure whether voice/fax calls are routed to alternative telephone numbers, and/or whether the calls are recorded within the message **notification** 514.

Detailed Description Text - DETX (37):
Once message alert 703 is turned on, and a message type 704 is selected, the user can configure how s/he wishes to be alerted via drop down box 706. Drop down box 706 illustrates four alternative message alert types: fax, email, voice, and pager, or any combination of these. For example, a user may wish to be paged upon receipt of any fax. The user would select fax in box 704, and pager in box 706. Then, upon receipt of any fax, message **notification** 514 would cause the user's pager to be called.

Detailed Description Text - DETX (39):
Referring now to FIG. 8, a screen shot 800 is shown which illustrates how a user enters specifics regarding the communication settings selected in box 702 of FIG. 7. More specifically, telephone numbers for call **forwarding** are entered in box 802. Telephone numbers for follow me routing are entered into box 804. A pager number (and PIN) are entered into box 806. Fax **forwarding** numbers are entered into box 808. In addition, the selection boxes 704 and 706 are repeated in screen 800 for ease of use.

Detailed Description Text - DETX (41):
Referring now to FIG. 10, a screen capture 1000 is shown that summarizes filters that have been created for incoming messages. A first filter 1002 is created for voice **mail** originating in area code 512 that contains **urgent** within the subject box. A second filter 1004 is created for email with a sender's name of "Kang", where the body of the email contains the word "patent". Either or both of these filters may be applied to distinguish incoming messages for the purpose of alerting a user.

Detailed Description Text - DETX (42):
The above description of FIGS. 6-10 provide one embodiment for entering message alert options into ThinkLink. One skilled in the art will appreciate that it is not the interface that is important. Rather, it is that message alerts may be generated for one or more receiving devices, upon receipt of any message, voice, fax or email, based either on message type, or on further criteria established via filters applied to received messages. The methodology incorporated into the message **notification** 512 is particularly illustrated in FIG. 11, to which attention is now directed.

Detailed Description Text - DETX (43):
Referring to FIG. 11, a flow chart 1100 is provided to illustrate the message **notification** methodology incorporated within ThinkLink. Flow begins at block 1102 upon receipt of a communication (whether voice, fax or email), and proceeds to block 1104.

Detailed Description Text - DETX (44):
At block 1104, a determination is made as to whether the received message is an email, voicemail or fax. The message is then **forwarded** to one of the blocks 1106, 1108 or 1110.

Detailed Description Text - DETX (48):
Referring to FIG. 12, a block diagram 1200 is shown, similar to that described above with reference to FIG. 5. The diagram 1200 includes a number of different calling devices 1202 connected to a local data server 1204 in New York, and a data server 1214 in Paris, for example. When a call is made from any of the devices 1202 (fax, phone or email), and the message **notification** 1210 receives the message, the message **notification** determines whether an alert is to be provided, and if so, to what messages. If an alert is to be provided the message **notification** determines how the alert is to be provided (email, fax, pager, for example), and delivers the alert to the appropriate data server 1214. The receiving device specified by the user receives the alert to **notify** the user that a particular message, based on message type, or other criteria, has been received. The user can then connect to the ThinkLink web server 1208, either from a computer or telephone, and can retrieve the message.

Claims Text - CLTX (1):
1. A method of supporting device independent messaging **notification,** the

method comprising: receiving a plurality of communications, including telephony, email and facsimile communications, on behalf of users via a telephony server and first and second point of presence (POP) data communications servers; converting all received communications, including said telephony, email and facsimile communications, as necessary into a format compatible with a data network linking said POP data communication servers; routing all of said converted telephony, email and facsimile communications through the POP data communications servers via the data network to a message **notification** system; generating message alerts in the message **notification** system according to settings defined by said users; and routing the message alerts through the POP data communication servers via the data network to communication devices associated with said users.

Claims Text - CLTX (6):
6. The method of claim 1 further comprising recording messages for said converted communications in the message **notification** system.

Claims Text - CLTX (7):
7. The method of claim 1 wherein generating message alerts in the message **notification** system according to settings defined by said users comprises: defining a filter setting; applying the filter to said communications routed through the message **notification** system; and generating message alerts based on the filter setting to distinguish said received communications.

Claims Text - CLTX (11):
11. The method of claim 7 wherein defining the filter setting comprises defining a key word, and wherein applying the filter comprises searching for the key word in said communications routed through the message **notification** system.

Claims Text - CLTX (12):
12. A method of supporting device independent messaging **notification,** the method comprising: receiving a plurality of communications, including telephony and email communications, on behalf of users via a plurality of point of presence (POP) communications servers wherein receiving includes receiving the plurality of communications from a plurality of different types of message sending devices; converting all received communications, including said telephony and email communications, as necessary into a format compatible with a data network linking the POP communication servers; routing all of said converted communications through POP communication servers via the data network to a message **notification** system; generating message alerts in the message **notification** system according to settings defined by said users; and routing the message alerts through the POP communications servers via the data network to communication devices associated with said users.

Claims Text - CLTX (13):
13. One or more computer-readable media having computer-executable instructions for performing a method of supporting device independent messaging

notification comprising: receiving a plurality of communications, including telephony, email and facsimile communications, on behalf of users via a telephony server and first and second point of presence (POP) data communications servers; converting all received communications, including said telephony, email and facsimile communications, as necessary into a format compatible with a data network linking said POP data communication servers; routing all of said converted telephony, email and facsimile communications through the POP data communications servers via the data network to a message **notification** system; generating message alerts in the message **notification** system according to settings defined by said users; and routing the message alerts through the POP data communication servers via the data network to communication devices associated with said users.

Claims Text - CLTX (14):
14. One or more computer-readable media having computer-executable instructions for performing a method of supporting device independent messaging **notification** comprising: receiving a plurality of communications, including telephony and email communications, on behalf of users via a plurality of point of presence (POP) communications servers, wherein receiving includes receiving the plurality of communications from a plurality of different types of message sending devices; converting all received communications, including said telephony and email communications, as necessary into a format compatible with a data network linking the POP communication servers; routing all of said converted communications through POP communication servers via the data network to a message **notification** system; generating message alerts in the message **notification** system according to settings defined by said users; and routing the message alerts through the POP communications servers via the data network to communication devices associated with said users.